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ABSTRACT

This collection of conference papers consists of a series of five case studies conducted in Denmark, France, Italy, Spain, and Turkey. In Denmark, an exploration of computer conferencing in distance education included an examination of the pedagogical motives for using computer conferencing, the availability of computers in study centers, and future improvements in the conferencing system. The French case study focuses on computer studies in French secondary schools, and includes a brief chronological account of the production and distribution of software in schools, and the philosophy and objectives behind the "joint licence" procedure, i.e., the ability of educators to purchase software at affordable prices unavailable to the public. Projects in Italy, Spain, and Turkey had similar objectives: to highlight the relationship between the mass media and the school, including the sociological and cultural questions underlying the technology, teaching methods and education policies, historical backgrounds, support infrastructures, and software development strategies. Two charts accompany the French case study. (MAB)

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Standing Conference
of European Ministers of Education

Sixteenth Session, Istanbul, 11-12 October 1989

The information society —
A challenge for education policies?

Five case studies:

— Denmark
— France
— Italy
— Spain
— Turkey

IR 053389

Forty years
Council of Europe

Strasbourg 1989

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STANDING CONFERENCE

OF

EUROPEAN MINISTERS OF EDUCATION

Secretariat : Council of Europe

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THE INFORMATION SOCIETY - A CHALLENGE FOR EDUCATION POLICIES?

FIVE CASE STUDIES :

- DENMARK
- FRANCE
- ITALY
- SPAIN
- TURKEY

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DENMARK: COMPUTER CONFERENCING IN DISTANCE EDUCATION

Joergen Bang and Morten Moeller*,
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Since January 1988 Jutland Open University (JOU) has been using computer conferencing on an experimental basis.

In December 1986 JOU in collaboration with Aarhus Technical College signed a study contract with IBM Denmark. The objective of this project is to develop, on the basis of strategic IBM products, a computer conferencing system for distance education/learning and to implement and test this system in specific open university courses.

So far we have tested the use of computer conferencing in distance education on five courses in 1988 and 1989. But before we give a description of the preliminary results, a short presentation of the educational model of JOU and the pedagogical motives for using computer conferencing will be needed.

Pedagogical motives for using computer conferencing

The Jutland Open University is a joint venture between the Art Faculties of the University of Aarhus, the University of Aalborg and the University Centre of Southern Jutland.

The basic idea underlying adult education in Denmark has been that it should be available for all adults irrespective of their educational qualifications and that the primary aim should be personal fulfilment. Therefore in Denmark no tradition of university-level correspondence courses has been developed and no degrees or university diplomas have been awarded within this framework.

JOU was established in 1982 to bridge the gap between the informal adult education system and the formal system, providing an opportunity for a university education to people without the formal entry qualifications.

All the courses are developed by teachers from the universities involved. The teachers are in charge of the tutorials, the counselling and the exams. In other words there is no division of labour between course teams, tutors and counsellors. This means that JOU tutors are also scholars engaged in research parallel to their tutorial tasks in the JOU courses.

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In Danish universities there has been a close connection between research and education. University teachers have always devoted half their time to research projects. This model has been carried over into the pedagogical conception of JOU.

The group-oriented concept is another essential feature of JOU. This means that the students are organised in classes of 20 to 35 students. These classes meet five or six times a year, at weekend seminars and summer schools. All-in-all the students are given about 20 days of face-to-face tuition during a year.

Within the class a number of smaller study-groups or project-groups may be organised to meet or communicate during the periods between the seminars. These groups may be organised on a local basis between students coming from the same area, or they may be organised on a more subject- or project-oriented basis, independently of where they live.

From an educational or pedagogical point of view we try to involve the students in the planning process and in the process of structuring the study material. In this way we hope to establish a higher degree of interactivity between the knowledge, experience and interests of the course teachers and that of the students.

Technologically, this results in the need for open learning activities and processes characterised by multi-dimensional communication between teachers and students and between the students themselves. Therefore we needed to find media and develop media configurations which would enable geographically isolated students to communicate in groups and to get help and counselling from the teachers on a day-to-day basis.

We find that computer conferencing satisfies these needs in a lot of ways. It is one of the few pedagogical tools for promoting social integration and other interactive processes in an educational system where students are geographically isolated from each other, and where, consequently, the possibilities for close contact and co-operation are drastically limited compared to normal classroom teaching.

At the same time computer conferencing is a democratic medium which allows authentic communication between participants. And perhaps the most important of all, communication in computer conferencing takes place independently of time and place.

Until now we have used the Swedish PortaCOM computer conferencing system on an IBM mainframe and tested it through the teaching of three courses in 1988 and two in 1989. The computer conferencing facilities have been used for communication, group work, instruction and information retrieval in addition to the five seminars and normal telephone tutoring. Computer conferencing has been used as a supplement to help students in the periods between seminars - not as a substitute for face-to-face contact between students and teachers.

Different pedagogical models and different combinations of hardware have been tested. In 1988 two art foundation courses were taught in parallel. In one, all the students were equipped with a personal computer and a modem at home, whereas in the other course the students had to use the facilities of the nearest JOU study centre. A third course in archaeology also used the study centres.

The test period will end this year, so we have no final conclusions yet, but the preliminary results show that computer conferencing has been an efficient tool in distance education. The students with the home-based personal computers have found that computer conferencing has facilitated communication with the teachers and their fellow students. These students completed the art foundation course with better grades than on similar courses where computer conferencing had not been used. Their success rate was higher and there were considerably more activities between the students and the teachers and between the students themselves.

For this group of students who had a micro-computer at home and very easy access to the conferencing facility, the conferencing system has been a very useful addition in distance education.

However there were problems with the use of the system. The students found that it placed a lot of attention on the system itself instead of on the actual learning process; the teachers were not trained efficiently for organising subject-oriented communication on the system; the group of students who had access to the system only in the Study Centres did not use it very much; and there were problems inherent in the system itself. For instance Portacom only handles 7-bit ascii-text-files.

To test whether these problems can be overcome, a new approach has been implemented in 1989. The experiment on the art foundation course is being repeated with a new group of students equipped with home-based computers. We want to test the results of improved teacher training for computer conferencing (cf. Bodil Brander Christensen: "The Teacher and Computer Mediated Communication at Jutland Open University. A Case Study") and the effect of placing the technical introduction to computer conferencing within the JOU staff instead of within the course.

In addition a course in mass communication also uses computer conferencing - 20% of the students have home-based personal computers with modems, the rest are using the Study Centres.

Computer conferencing and the Study Centres

Originally five Study Centres were established. Two in Aarhus connected to Aarhus University, one at Aalborg University, one at the University Centre of Southern Jutland and one in Holstebro - a city in the western part of Jutland. Each study centre is connected to the mainframe in Aarhus through a leased circuit (14.4 Kbit/sec) and is equipped with graphic terminals (IBM 3179), personal computers (IBM XT and PS2/60), a scanner (IBM 3118), and a printer (IBM 4224).

The objectives of our experiment with computer conferencing in connection with the Study Centres is to find out whether it will be a feasible solution in the future. At present such centres could be established all over Denmark so that every student would have to drive less than 50 km to find a Study Centre. It would be a cheap solution for the Open Universities and for the students compared to the alternative: for each student to have a home-based personal computer on a leasing contract. The Study Centres could be equipped and run by the city councils as a public service open for all sorts of educational functions. But the question is: will the students use the Study Centres?

So far our experience has not been very convincing. It has been difficult to motivate the students without home-based personal computers to use computer conferencing. The students seem unwilling to leave their homes and go to the Study Centre for communication, when they can just as easily pick up the telephone or mail a letter. The prospect of rewriting one's essays and comments on the conferencing system is not a productive one from the students' point of view.

The Study Centres have to be equipped with other facilities than just computer communication. The students must be able to work there for several hours. Therefore the environment of the centres must be attractive with rooms for group meetings among the students in the region, copying machines, television sets, video recorders, coffee machines, etc. A Study Centre has to be something between a laboratory and a library.

Furthermore the students have to be motivated for using computer conferencing. To most of them it is a completely new way of communicating and they have to discover its possibilities.

In the first couple of months of the mass communication course the teachers (Joergen Bang and Soeren Kolstrup) had the frustrating experience that very few students were using the computer conferencing system. The students did not use the telephone or the ordinary mail either, because they knew they were not supposed to. After two months the teachers decided to oblige the students to use the system. They designed a large-scale project in quantitative content research. Over a period of four days each student had to analyse a newspaper, a radio newscast, or a television news programme. They had to register the main events on a prepared form in a conference, and give their comments on the genres and points of view in the different articles/elements. Later they had to write a small essay placing their news media in the context of the national news flow.

The experiment is still running, so we have no final conclusions. But the activities on the system have been enormous. It seems that the students can see the possibilities of computer conferencing in this situation. They are building a sort of database, instead of mailing an enormous number of letters. At the same time they gain access right away to all the information collected by their fellow students, and can use it when they need it.

In this case we have obliged the students both to use computer conferencing and to work through the study centres. They have had no alternative, if they wanted to continue with the course. Unfortunately, we think it is the only way to do it!

The economic argument is one reason why we are so keen on the use of Study Centres. Another is that the Study Centres are the only way in which we can give the students access to databases, graphics, etc. These facilities require fast connections (64 Kbit/sec) because huge masses of data have to be transferred, and rather sophisticated equipment, all impossible on home-based micro computers at a reasonable price, at least for the moment. Within a few years it will be possible to establish slow scan video connection with all the study centres in Denmark using the Integrated Systems Digital Network (ISDN) service of the PTT. Integrated ISDN workstations consisting of a computer workstation, an audio headset, a video monitor, and a video camera will be available very soon. This will give the students opportunities for direct eye and ear contact to the teacher and fellow students as a further supplement to computer conferencing.

Developing an improved system

As mentioned above, the conferencing system itself had a great impact on the use of the system. For trained computer users it was clearly an obstacle that PortaCOM is a command-driven system not like the systems they normally work on. For inexperienced users it was difficult to understand that only ascii text could be put into the system and that it operated in line mode. That the system is only able to handle ascii text was especially annoying in the phase where the students used the system for group-based production of their examination essays, as these typically have been produced off-line on a micro computer using a word processor. These texts could not be put into the conferencing system itself, but had to be transferred on an additional file transfer system.

These restrictions - which are common in the conferencing systems commercially available for the moment (COSY, PARTICIPATE, CAUCUS etc.) - have led JOU to the decision to start designing a new conferencing system which will be able to handle all sorts of data in the same integrated system. The system will be designed to run in full screen mode and be menu-driven.

It will be developed on the basis of commercially available products such as IBM's relational database programme, SQL, a fourth generation programming language, CSP, and various help tools. This approach will enable the development to be finished within a short time. It is estimated that the system will be fully operational in December 1989 and that an alpha(test) version will be available in July 1989.

By designing the system in full screen mode it will be possible to work with pop-up windows and curtains and thereby to operate the system by the mouse and/or function keys. The design of the user interface will follow the standards now set by Apple and IBM. By following these standards the system will operate in much the same way as the systems which experienced users normally work on.

The design specifications stipulate that it must be possible to tailor the system for the specific needs of an institution or a specific course. In practice this will be done by blinding some of the available functions for the user and adding on new functions if needed. In the same way it will be possible to have a multilingual interface to the system.

By using the database programme as the core of the system it will be possible to build into the conferencing system electronic libraries of CAL programmes, spreadsheets, scanned-in pictures and texts. The texts can be either in the original format or transformed automatically into ascii. The design specifications also stipulate that the system should be built in modules so that it will be possible to put part of the system (the reading and writing functions) on micro computers integrated with the communication programme allowing automatic up- and download of news.

Once the system is available it is our hope that new ways of structuring distance education will emerge as teachers from different fields start using the system.

FRANCE : AN ORIGINAL PROCEDURE FOR THE ACQUISITION OF SOFTWARE IN THE FRENCH EDUCATION SYSTEM: JOINT LICENCES

I. Computer studies in French secondary schools

To date, approximately 130,000 microcomputers have been installed in France in the 8,000 general, technical and vocational state secondary schools. Most of these are PC-compatible computers and computers organised in mini-networks.

The use of computers in the educational system is developing in three directions:

- informing and training future citizens

In addition to the need to make pupils aware of what will be a permanent aspect of their working lives, and indeed of their everyday lives, pupils should be taught to regard computer technology not just as an educational discipline - which is, in any case, studied only in higher education or as an optional subject in senior high schools - but above all, as a series of applications, methods and approaches which make it possible to extend the boundaries of human thought and action.

- using computers for educational purposes

It was very quickly realised by teachers and educational administrators that computers could be used as a powerful instrument to improve the effectiveness of the transmission and absorption of knowledge. This involves using computers as educational equipment providing the opportunity to introduce modes of learning which were difficult, if not impossible, to apply using traditional resources.

- providing young people with training adapted to the requirements of the employment market

In order to give young people the qualifications they need to find employment there will need to be an unprecedented extension of the range of knowledge and skills taught. While it is easier to see which changes are required in technical education (which are directly related to changes in the professions concerned), the fact remains that this process applies to all school disciplines.

These uses of computer technology in schools obviously depend on the existence and distribution of software through which the possibilities opened up by computers can be exploited to the full. The range of software available which corresponds to these requirements is vast and ranges from the specialised software used with certain classes preparing for the advanced vocational training certificate to tutorial programmes via applications which have now become classic such as word-processing, spread-sheets, etc.

It was therefore necessary for the Ministry to introduce purchase and distribution procedures which conformed to the main lines of its general policy. This report is intended to describe one of these, the procedure for the acquisition of user's rights in relation to software usually referred to as the "joint licence procedure", which was introduced nearly two years ago. In addition to a technical study

(stages of the procedure, "philosophy" behind the contract, problems of implementation, etc), the report will contain an initial assessment intended to analyse not only the impact of this operation but also its limits and potential pitfalls.

Before studying the procedure in detail, the report gives a brief account of the background to its adoption, since it formalises relations between the private sector and schools which cannot be understood without a knowledge of the main policy options of the French education system on the one hand (decentralisation and dispersal of resources, national policy on the introduction of computer technology into education, etc), and problems arising directly from the enormous growth of the software market in the industrialised countries on the other (competition and legal questions, to mention only the most obvious). The attempt to give due consideration to these various questions is one of the original features of the procedure.

II. Brief chronological account of the production and distribution of software in schools

There have been three periods in the development of the use of computer technology in education, each of which had its own procedures for the production and distribution of software:

A. Experimental phase - do-it-yourself production

Following the international colloquy organised in 1970 in Sèvres by the OECD, the so-called "58 lycées" experiment marked the beginning of the introduction of computer technology into French secondary education. As a result of this project approximately 500 teachers were given mainly technical training intended to enable them to decide how to make use of computer technology in their teaching. The educational programmes created by these teachers were distributed free of charge to lycées by the Institut National de la Recherche Pédagogique (INRP) as they were produced. The operating system for the computers and the language (LSE), produced by the university sector, were delivered with the software. At this time there was no software industry in the proper sense of the term, ie a sector structured for the production and distribution of software.

The training and equipment aspects of the experiment were halted in 1976. The INRP continued to distribute the programmes produced and an INRP research team was asked to assess them.

B. Gradual development phase - establishment of an industrial and commercial sector in the software field

At the end of 1978 the Government adopted a plan for the supply of 10,000 microcomputers; soon after, in 1983, as part of the IXth plan, this project was extended, becoming the operation known as "100,000 micros, 100,000 teachers trained". The final stage of this process was the announcement by the Prime Minister in January 1985 of the "Computers for All" programme and the decision to equip all schools with computers.

In 1981 the Centre National de Documentation Pédagogique (National Centre for Educational Resources) was asked to co-ordinate the production of educational software and its distribution to

schools. The principle adopted for this distribution was that the products would be free of charge, with the centre's regional branches being given responsibility for updating the products available. This public sector policy of ignoring the need for an immediate return on investment was calculated to create the conditions under which the educational quality of products could be guaranteed.

The same period saw the emergence of a commercial and industrial sector turning out professional products, thanks to the standardisation of equipment and operating systems and the increasing computerisation of society.

This development raised a number of questions:

- about the quantity and quality of the products available

As the Pair-Lecorre report pointed out as far back as 1981, "one of the main obstacles to the introduction of computer technology in schools is the inadequate supply of high-quality educational software",

- about the relations between the public and private sectors

The production of both educational software and professional products requires more and more time, skill and development facilities; it must therefore be organised along industrial lines. The public sector cannot cope with the variety of necessary developments. The emergence of educational software produced by private companies and based on the existence of an economic sector already specialising in the production of educational books and materials (school books, equipment for physics laboratories, etc) raised the problem of relations between the Ministry and private publishers.

Consequently, it seemed more and more difficult to imagine the public sector in a monopoly situation without discouraging the development of a market in which the Ministry of Education would not be the only customer and the emergence of French products which would have to win their place in a European or even international market.

- about the distribution of software to schools

Firstly, centralised distribution to schools by the Ministry of Education raised awkward management problems in view of the number of schools and the number of different products. Secondly, a legal problem was created by the practice adopted by many schools of making joint orders. This practice enabled each of the schools involved to acquire copies of the various software items received by the others, a method prohibited by the legislation of July 1985 on intellectual, literary and artistic property.

C. Generalisation phase - structuring of relations between the private and public sectors in the purchase of software

The launch of the the "Computers for All" programme may be regarded from one angle as the end of a centralised process for the introduction of computer technology into the various parts of the education system and from another angle as the beginning of a period of structuring and normalising the relations between the public and private sectors.

The main policy options of the French educational system with regard to decentralisation have naturally been applied to purchases of computer equipment. These are the responsibility of the local authorities (Conseil Général and Conseil Régional), with the exception of specific allocations, which remain centralised.

For the reasons mentioned above, the public authorities have decided that software should be produced by private sector publishers or computer software houses. Co-operative relations are beginning to be established through the educational innovations programme. Teachers participate in the design of teaching strategies which can be translated into educational software. Products which the private sector would not be able to publish (specific disciplines in which products would not be economically viable because of their limited distribution) are produced through co-publishing arrangements similar to those used for textbooks.

In dealing with this incipient market it is the responsibility of the Ministry of Education to specify its requirements clearly and institute a purchasing policy; otherwise, educational software publishers will not continue to take the risk of publishing ambitious products which are expensive to develop. Moreover, and this applies to all types of product, the illegal copying of software in schools must be prevented by enforcement of legislation on breach of copyright.

The maintenance of adequate budgetary appropriations for the purchase of software from one financial year to the next is necessary to ensure that enough people are aware of the policy and to meet the growing demand for high-quality products. A substantial proportion of these appropriations is made available to schools directly so as not to restrict their freedom of choice.

III. The joint licence procedure: objectives, principle and "philosophy"

A. The objectives and the principle

The "joint licence" procedure, which has been in use for two years, is intended to provide solutions to the problems raised by the developments described above. The objectives can be summed up as follows:

- to avoid the need for teachers who wish or are compelled to use educational or professional software to resort to illegal practices,

- to reduce the cost of these products, particularly for professional software, which is often very expensive,

- to interest private publishers in developing and distributing high-quality educational software in a market which is still limited,

- to encourage teachers to use products corresponding to ministerial guidelines,

- to encourage schools to purchase high-quality software while respecting their freedom of choice in this field.

The principle of the "joint licence" lies in the purchase by the Directorate of Senior High Schools and Lower Secondary Schools of the right to use for an unlimited period certain items of software previously selected for their educational and technical qualities. The software items concerned in these contracts are intended solely for educational use. Consequently, schools, initial and in-service teacher training institutions, and the information and guidance services responsible to the Directorate of Senior High Schools and Lower Secondary Schools can order these products directly from publishers, during a two-year period, at a price in keeping with the size of their budgets.

B. The "philosophy" behind the contract for the acquisition of users' rights known as a "joint licence"

The mechanism is apparently simple in principle, but the details are nevertheless fairly complex.

The contracts concluded between the Ministry of Education and various publishers therefore have two aspects, which are related through the fact that, while the contracts are concluded between these two partners, the beneficiaries are the establishments concerned; they are contracts conferring a right on a third party.

The considerations set out below are intended as a description of the two types of relations which will be established: between the Ministry and publishers on the one hand, and between publishers and schools on the other.

1. Relations between the Ministry of Education and publishers

i. Assessment of the cost of the licence and the cost of the product to schools

The purpose of the licence is to enable schools to acquire software at a cost well below the usual market price. It does not replace all the contractual relations between publishers and schools; on the contrary, the latter will themselves purchase the software they regard as necessary for their requirements, but will simply do so at much more advantageous prices than those offered to the public as a whole or to the education service hitherto. The price in question is only marginally higher than the product's production costs plus postage.

This possibility of purchasing software at very low prices is not limited to a certain number of copies (for the whole of France or for individual establishments), even though the cost of the licence is initially assessed on the basis of an overall estimate of requirements. Such a limit would have been an irksome constraint, likely to lead to unfortunate consequences (as schools would need to hurry to buy in order to qualify for the special low price) and prejudice the success of the software concerned. It is therefore clear that when the number used for the initial estimate has been exceeded the editor will sell to schools at a price close to the cost of production, with no compensating adjustment to the overall cost of the licence: this is, in a sense, the price that has to be paid for the success of the operation.

If the opposite case occurs, ie. if fewer orders for the product are received than were forecast, the Directorate of Senior High Schools and Lower Secondary Schools can order directly from the publisher on the same conditions as a school. Thus the central administration cannot make a financial loss.

The sum paid for the licence by the Ministry takes into account not only an estimate of the numbers of compatible machines owned by schools but also the fact that selection of the software by the Ministry of Education gives a considerable boost to sales of the product; although such selection is not intended as a seal of approval, that is nevertheless the function it serves.

ii. Duration of the contract

The contract is concluded for a period of two years; only during this period can schools purchase the products under these favourable conditions. However, this period does not apply to user's rights in respect of the purchased products, which are valid for an unlimited period.

iii. Definition of the product

The product is defined by the name and version under which it is listed in the publisher's catalogue. It is identical with the version available commercially. It comes together with the relevant documentation (technical guide and teacher's notes). Nevertheless, in some circumstances, in view of economic requirements, it may be permissible not to include documentation with every set of software disks, eg. documentation for four sets of disks, as in the case of professional products, which sometimes have bulky technical handbooks. On the other hand, more than one set of teacher's notes may be supplied for products intended for local networks, for example.

The contract specifies the types of machine with which the product can be used.

iv. Replacement by updated versions

When products are updated during the term of validity of the contract, two different solutions may be adopted:

- The new version is substituted for the old version, with the agreement of the Ministry, without any change to the cost of the licence or the purchase price for the school. The publisher is not obliged to maintain supplies of the previous version. This was the case in 1988 when Word 4 took the place of Word 3;

- The new version may be purchased by schools at a new price (but without change to the cost of the licence), in which case the publisher is obliged to maintain supplies of the previous version at its old price. It is then necessary to add a clause to the contract. This was the case in 1988 for four products: Turbo Pascal, Turbo Graphic, VP Planner and Graph in the Box.

v. Winding-up of the company or liquidation of its assets during the term of validity of the contract.

In such cases the Minister can take over responsibility for distribution of the products in order to meet orders from schools. To that end, the publisher is required, when the contract is signed, to deposit all materials needed for duplication of the product with an official depositary.

vi. Sales accounts

A copy of each official order form is sent to the central administration so that it can supervise the procedure. Thus it is possible to measure the distribution of each licenced product regularly.

2. Relations between schools and publishers

i. Ordering and delivery conditions

Schools themselves purchase the software they need from the publisher, either directly or through the latter's distribution network. This is therefore a second type of contract, established directly between schools and publishers, and formalised through the despatch of the official order form which schools are obliged to use to make their purchases.

The publisher undertakes to reply to any order made by an approved establishment within one month.

ii. Conditions of use

Use of the software is not tied to a particular machine or a particular place. As already pointed out, the right of use is valid for an unlimited period. In signing the order form, the school gives the publisher its express undertaking not to make any unauthorised copies of the software.

iii. Replacement of defective goods, after sales service

The publisher undertakes to correct as soon as possible any mistakes which might be detected in the software or accompanying documentation where such mistakes would prevent normal use.

IV. Implementation of the procedure

The various phases of the procedure are as follows:

A. The definition of priorities

While the definition of requirements is relatively easy for professional software, it is much more difficult for educational software. It is therefore more important to define the objectives for each discipline; these will be specified in a document accompanying the consultation proposal which should enable publishers and software houses to decide whether their products can meet these requirements.

For this purpose the Directorate of Senior High Schools and Lower Secondary Schools co-ordinates the requests of the various boards of inspection and schools. Questions relating to budgetary possibilities may be submitted to arbitration.

B. Implementation

On the basis of the previously defined priority fields the Directorate of Senior High Schools and Lower Secondary Schools invites all publishers and software houses to take part in the consultation process, which is designed to give all publishers and companies developing software in the above-mentioned fields the opportunity to present their products and learn the details of the procedure.

As a rough indication, in 1988 the Ministry of Education received 582 proposals of software or planned software through this consultation process.

C. Assessment and selection of products

In order to examine these proposals and assess the educational value of the products concerned, the Director of Senior High Schools and Lower Secondary Schools has set up committees with responsibility for educational, technical and administrative details. These committees mainly cover particular disciplines, with the exception of committees specialising in the study of multi-purpose applications such as programming languages, authoring systems, expert systems etc.

The conditions under which this educational assessment is carried out guarantee the confidentiality of the information provided.

During the 1988 procedure a total of 111 persons participated directly in the work of 16 committees.

The results of this work, which provide a detailed assessment of products currently available on the software market in relation to the requirements of the education system, are used as the basis for a series of reports. These reports specify which products have the appropriate educational and technical qualities.

The purchasing procedures are implemented on the basis of these results.

The Directorate of Senior High Schools and Lower Secondary Schools then replies to all the publishers who have submitted proposals, informing them whether the products they have proposed during the consultation process are suitable for future purchase.

D. The negotiation phases

The companies whose software has been selected are invited to the Directorate of Senior High Schools and Lower Secondary Schools to discuss their financial proposals.

Negotiations are based on:

- an assessment of the number of machines with which the product is likely to be used (planned area of use of the software, previous sales statistics etc)

- consideration of the type of product: educational software (in particular items functioning only on mini networks) for which the only market is the education system is not subject to the same cost assessment criteria as professional type software.

Negotiations are concluded with the signature of the contract, which must specify the cost of the acquisition of user's rights and the licence holder's obligations, particularly his undertaking to reply to all orders made out by approved persons on an official form (appended to the contract) showing the unitary price of a single copy of the software in question.

E. Publication of results, information

Information to schools about the products for which user's rights have been acquired is circulated through notices in the Bulletin Officiel de l'Education Nationale. A more detailed catalogue describing the products and specifying the conditions for their acquisition and use is sent to all secondary schools.

V. Products available under the joint licence procedure - first overall assessment of the procedure covering the 21 products made available under joint licence in 1987

To date, users' rights have been acquired for 55 items of software (21 in 1987 and 34 in 1988, including 2 CD-ROM titles). Appendix I contains a list of these products, their type, their level, the discipline concerned and the type of equipment with which they can be used.

It will be seen that in 1988 priority was given to educational software and professional software corresponding to certain precise objectives of technological and vocational training. In 1987 the procedure was used more for programming languages (Pascal and Logo) and multi-purpose professional applications (spreadsheets, database management systems, word processing, graph programmes).

The procedure was given a very favourable reception by teachers and publishers. Orders from schools for "licenced" products reflect the important role education tends to play in the field of the new information technologies (see Appendix II); by 30 June 1988, ie. scarcely a year after the signature of the first 21 contracts, 61,000 items had been ordered by schools. By that date, for example, 9,518 copies of "Multiplan" had been ordered by senior high schools and lower secondary schools (out of 57,000 copies sold in Europe in 1987-88) and 8,400 copies of "Word" (99,000 in Europe during the same period); the average for educational products was about 2,000 copies.

Software co-ordinators in the local education authorities have conducted a large scale information campaign on the types of products available, the arrangements for purchase and the conditions for use. The publishers of the products concerned have played a very active part in this campaign, proving, if proof were needed, that they regard the education sector not only as a market but also as an economic platform for the distribution of their products outside this sector.

VI. Conclusion

The favourable reactions which met the initial implementation of this procedure seem to indicate that it meets the general requirements of secondary schools and that the use of computer technology in the various school disciplines is on the way to becoming common practice.

It should be noted that the procedure works well with completed products already on the market. However, educational software requires heavy investment in a relatively weak market and public institutions therefore need to intervene either in advance, through direct aid to production (as in the case of various European plans such as Delta or Comett and the policies of certain countries such as Canada), or through an undertaking to purchase completed products. The joint licence procedure belongs to this second type of intervention. It could be extended to products still at the development stage and this would help to encourage the emergence of promising products. It needs to be complemented by co-production agreements between the public and private sectors for software with a very limited potential market.

With regard to professional products, software publishers pay close attention to the Ministry's choices, in the hope that through the education system they will gain access to a faithful future market. As a result of this analysis the Ministry has begun to receive a growing number of proposals relating to products, services, discounts, etc. Processing of these proposals must not be allowed to slow down the procedure, otherwise there will be a danger that the requirements initially expressed will not be satisfied in a field where changes are very rapid.

It is necessary to make sure that no monopoly is established with regard to a particular type of product. Schools have a duty to teach pupils the concepts behind software applications and give them experience of using the products based on them, but must ensure that there is no confusion between these concepts and the brand names of the products.

Moreover, the "joint licence" procedure obviously does not meet all the requirements of the educational system. For example, bulk purchase procedures are more suited to certain very specific requirements in technical education, where particular courses are run in only a few geographically scattered centres and the products are expensive and essential for the development of the disciplines involved. Similarly, the Ministry can acquire users' rights for only a limited number of software items; there is a risk that good products might not be ordered by schools because they have not been "selected", even though schools are free to decide what to purchase. These problems would hinder the development of innovative educational practices. It is therefore very important to provide information to users and local decision-makers.

Finally, there has to be training in the use of the products concerned, and especially their use in the classroom; otherwise there is a strong danger that, however many items of software are acquired, their distribution will be measured only in quantitative rather than qualitative terms.

APPENDIX I

LIST OF THE SOFTWARE FOR WHICH USERS' RIGHTS WERE ACQUIRED IN 1987 OR 1988

Name	Type	Year	Publisher	Equipment	Maths	French	Mod. Lang.	Phys. Chem.	Hist. Geo. Econ.	Nat. Sc.	Inf. Lit.	Applied tech.	Intw.	Prep. Cers
Abeille Cayrisse	1	88	Cedic	NR						C(L)				
Apprentissage	1	87	Hatier/Cedic et	NR	C	C								
Azertiste	1	88	Softissimo	PC							C			C
Balance	2	88	Hatier	NR		C	C				C			
Cartes	2	87	Cedic	NR					C		C			
Compolangues	1	87	Jeriko	NR			C							
Crocus	4	88	Microland	PC							L			
Dbase III Plus	3	87	LCE	PC					(C)		(C)	L	L	(C)
Demofase	2	88	Jeriko	PC					L					
Dimension 2	4	88	Ere Informatique	PC								C(L)		(C)
Dmt	4	88	Mesasoft	PC								L		
Electrolar	1	88	Edi Belin	NR				C						
Etude Circuits	1	88	Langage et Infor	PC				L				L		
Euclide	1	87	Cedic	NR-PC	C									
Euclide Esp	1	88	Cedic	NR-PC	CL									
Framework II	3	88	LCE	PC	(L)	(L)	(L)	(L)	(L)	(L)	L	(L)	(L)	(L)
Keyshole	4	88	GHM	PC							L			
Kidpad	4	87	Pi-Soft	PC								L		
Lagon in the Box(+)	3	87-88	Softissimo	PC	CL			CL	CL	CL	CL	CL		CL
Limaster's	1	87	ACL	NR	C									
Lavelin	3	87	LCE	PC	CL			CL	CL	CL	CL	CL		CL
Le 65 Exercice	1	88	Foucher	PC							L			
L'ecrivain	2	87	Hatier/ACT	NR-PC		C(L)	(C)				C			
Le Respiration	1	88	Langage et Infor	PC						L				
Le Journaliste	2	88	Cedic	NR		C	C							
Le Monde en Chiffres	2	88	Hatier/ACT	CD					L		L			
Le Pendule	1	88	Langage et Infor	PC				L						
Le PH	1	88	Langage et Infor	PC				L						
Le Sphinx I	4	88	Le Sphinx	PC					(CL)		(C)			
Logo Plus	5	87	ACT	NR-PC	(C)	(C)	(C)					(C)	C	
Logo Tortue 3D	5	87	FIL	NR-PC	C							(C)	(C)	
MaBase	2	88	Chrysis	NR		(C)	(C)		C		C		(C)	
Multiplan 3.0	3	87	Microsoft	PC	CL			CL	CL	CL	CL	CL		CL
Nanoscar	2	88	TNT	NR							C			
Open Access II	3	88	Frame	PC	(L)	(L)	(L)	(L)	(L)	(L)	L	(L)	(L)	CL
Open Access Junior	3	88	Frame	PC	(CL)	(CL)	(CL)	(CL)	(CL)	(CL)	C	(CL)	(C)	CL
Ordi Junior	4	88	Winner Software	PC							(C)			
Outils Info	1	88	Hatier	NR-PC	C	C	C	C	C				C	
PC et Nano TAP	1	88	Ordinateur Expres	NR-PC							CL			CL
Privilege	4	88	Microland	PC							L			
Reflex	3	87	Borland	PC	CL	(CL)	(CL)	CL	CL	CL	CL	CL		CL
Restauration	4	88	Microland	PC							L			
Roman	2	88	Cedic	PC		(C)	(CL)							
Sesos II	1	88	Larousse	PC							L			
Tesni	1	88	Losedic	PC							L			
Turbo graphix	5	87-88	Borland	PC	(CL)			(CL)	(CL)	(CL)	(CL)	(CL)	(C)	
TurboPascal 3.0/4.0	5	87-88	Borland	PC								(C)		
Valise Practi	3	87	FIL	PC	(CL)	(CL)	(CL)	(CL)	(CL)	(CL)	CL	CL	CL	CL
Vulcan Electricite	4	88	IA Micro	PC				(L)				L		
VP Planner (+)	3	87-88	Softissimo	PC	CL	(CL)	(CL)	CL	CL	CL	CL	CL		CL
Windows + Souris	6	87-88	Microsoft	PC									L	
Word 4.0	3	87-88	Microsoft	PC		(C)	(C)				(C)	L		CL
Works	3	88	Microsoft	PC	(CL)	(CL)	(CL)	(CL)	(CL)	(CL)	C	(CL)	(C)	CL
Zygomis	2	88	Hachette/ACT	CD		CL			C					C

1. Single-discipline tutorial programme or teaching aid; 2. Interdisciplinary tutorial programme or teaching aid; 3. Multi-purpose professional application; 4. Specialised professional application; 5. Programming language; 6. System software.

NR: Nanoréseau (mini-network), PC: MSDOS compatible, CD: CD-ROM,
C: Use in collèges (lower secondary schools), L: Use in lycées (senior high schools)

APPENDIX II

TOTAL PURCHASE BY SCHOOLS, AS AT 30 JUNE 1988, OF SOFTWARE MADE AVAILABLE UNDER THE 1987 JOINT LICENCE PROCEDURE

Name of company	Title	No. of copies ordered as at 15.2.1988	No. of copies ordered as at 30.6.1988
A.C.L.			
	. Imagiciel	1240	1530
ACT INFORMATIQUE			
	Logo +	912	1400
BORLAND			
	Turbo Pascal	5496	8244
	Turbo Graphics	2630	3682
	Reflex	2018	2220
COMMANDE			
	DBase 3+	3195	3977
	Javelin	468	549
FIL			
	Tortue de Mer	1383	1647
	Valise Practi	1286	1644
HATIER			
	L'écrivain	1900	2550
JERIKO			
	Compolangues	2790	3550
LANGAGE ET INFORMATIQUE			
	Apprenticiels	803	1250
MICROSOFT			
	Multiplan	6040	9518
	Word	5558	8439
	Windows	1102	1453
	Souris	170[illegible]	1720
NATHAN			
	Euclide	1446	1855
	Cartax	1348	1838
PI SOFT			
	GMP2D	350	438
SOFTISSIMO			
	Graph in the Box	1559	2066
	VP Planner	1137	1588
		Total number of copies supplied as at 30.6.1988	61158

ITALY : SCHOOLS AND THE MEDIA, 1954-1987: SOCIAL AND CULTURAL DIMENSIONS OF EDUCATION POLICIES

1. Introduction

The purpose of this study is to highlight certain aspects of the relationship between the mass media and the school of which relatively little notice has so far been taken and which have not been studied in depth in Italy or elsewhere. These are the sociological and cultural questions underlying the technology, teaching methods and education policies themselves. This text is based on the results of several years of experimental research into the media, schools television and school-media relations; particular reference is made to a research programme which was centred during its first few years (from 1981 onwards) on the University of Naples, and for which the Department of Cultural Sociology of the Cesare Alfieri Faculty of Political Sciences of the University of Florence is now responsible. The nature and findings of the research programme are believed to be of potential general interest in a wider context than Italy. The two basic reasons for this interest are the methodology, which is linked to the research strategies adopted, and the fundamental nature of the research - the specific characteristics of the situation in Italy make it a fairly rich source of information for others who are conducting experiments, in both developed and developing countries.

As far as methodology is concerned, we shall simply highlight some original features of the research programme:

- the intention to observe the education process in the long term, returning to the subject of the research on an annual basis;
- a combination of quantitative data (objective and structural and the results of questionnaire-based surveys) and qualitative data (collected through ethno-anthropological observation in limited contexts);
- comparative surveys involving the three social groups which together "make" a school (pupils, teachers and parents);
- a comparison between structural data and ideas (between "objective" realities and the way in which these are represented, and between opinions and the respect with which society views them).

We have said that the Italian research is fundamental, and we shall now give some of the reasons which make it of particular interest to the international community and to administrators in other countries who are responsible for education policies.

Italy is, at one and the same time, unique and symbolic, sometimes being in advance and sometimes lagging behind; our tardiness (eg in the extension of compulsory schooling) and our progressiveness (eg in commercial television broadcasting), have not been the result of deliberate education policy decisions: the majority of the phenomena which are most significant from the point of view of this experiment - ie those which concern relations between the media and the school - have emerged "spontaneously" out of the interaction or relationships, either symbolic or based on strength, within our society.

We shall cite three significant factors:

- the start of television broadcasting (1954), which reached a wide audience (1960) before schools and the other media did. Unlike most other highly developed countries, where television found its place at the end of a series of specific developments - education, the popular press, cinema and radio - Italy followed an unusual path, much more similar to that taken subsequently by other countries which only later, or recently, began the process of development.

- the first cycle of unified compulsory secondary education, for pupils up to the age of 14, was introduced in 1963; for just over 10 years, the nation had to cope with getting the mass of pupils to school, something which was largely done during a period upon which disputes and a generally anti-modern social atmosphere made a deep impression (1968-1978), and which also saw a devaluation of training and education;

- American-style private commercial radio and television took root (to the point at which they won more than 50% of the total audience) very rapidly (between 1979 and 1983), completely changing the relationship between the media system and both the economic and cultural worlds; particular results of the expansion of commercial television were increased domestic demand and changing young people's habits and increasing the pace of community life. We are looking at three cultural and social processes which are highly important to the subject under discussion and which place Italy in a position which differs from that of the countries of Northern Europe, as they bring Italy's experience much closer to two realities which are themselves remote from each other: the situation in America on the one hand, and on the other, the experience of the countries in the Mediterranean area and, in general, of other countries which were late in starting down the development path.

In Italy, the outcome of the last 30 years of relations between schools and the media is a situation characterised by major changes, both structural (the industrialisation and tertiarisation of the economy and major population movements) and socio-cultural (the results of a variety of cultural influences from ethnic, traditional and ideological sources and major socio-political and socio-cultural conflicts), which have had some effect on these relations, altering them in substance and in detail.

All these features of the situation in Italy mean that the lessons which can be learned have more general significance and importance and may be helpful for the structuring and management of education policies which aim to achieve beneficial co-operation between schools and the media.

2. Teachers and pupils' impressions of the media: diametrically opposing views

Firstly, an amazing research finding: questionnaires were distributed at higher secondary schools to a sample of final-year pupils (girls and boys aged between 17 and 19), their parents and all their teachers; they were asked to assess the influence (great, fairly great, little or non-existent) of seven major socialising factors (the family, the school, the media, the church, friends or peer groups, movements/associations and political parties) on young people in their

formative years. While the replies from the three social groups (pupils, parents and teachers) were distributed in a fairly balanced manner - revealing substantial agreement - in respect of the role of five of these agents: the family (very influential), friends (fairly influential), the church, movements/associations and political parties (all three considered to have little influence), major differences emerged in respect of the school and the media.

Looking at the role of the school, the most negative view came from the teachers, followed by pupils and their families; in other words it is the teachers themselves, much more than the parents and even more than their pupils, who have a negative view of schools, as they consider that schools actually play an inadequate role in shaping the younger generations.

The result in respect of the media is even more amazing: it is the teachers who consider the media to have a great influence on young people in their formative years (a view held by between 52 and 67%), while far fewer parents accredit so much influence to the media (between 20 and 30%) and the pupils' verdict is negative: the media have great influence in the opinion of between 5 and 18%, depending on geographical location - the figure being higher among pupils from the southern regions).

In the following years the same questionnaire was given to other schools, with the same results.

To sum up, there is a clear contrast in Italy's higher secondary schools between teachers' and pupils' attitudes to the relations between the media and the school: the pupils have no strong feelings about the media, while teachers tend to believe that the media are their main rivals.

Useful information for the purposes of interpreting the research findings can be obtained from the replies given by teachers and pupils to the other subjects in the questionnaire, ethno-anthropological observation of their establishments and discussions with teachers and pupils.

It is important to point out that, not only do teachers very clearly overestimate the part played by the media during young people's formative years, but they also view it in negative terms: they consider the influence of the media, particularly television, to be largely unfavourable. The role of the two major socialising factors recognised as being highly important - the family and the peer group - is regarded just as negatively. If we also bear in mind their lack of self-esteem and their view that the school has little influence on young people's formative years, we find ourselves looking at a rather disconcerting picture, which can be very briefly summed up as follows: the teachers at upper secondary schools believe that they are not carrying out their job satisfactorily, and lack motivation, as they feel that they are losing out to the greater attraction and influence on young people of three other socialising factors, namely, in order of importance, the media, the family and friends. In contrast, the pupils' attitude is very different. Not only do they attribute significantly less influence to the media than do their teachers, but they also hold a different view of the influence of the school,

friends and the family. At the end of their schooling, in particular, although they do not have too rosy a view of their schools - indeed, their attitude is critical - they nevertheless reach a much more positive verdict than do their teachers. As far as their relationship with the media, in particular, is concerned, it does emerge clearly from the replies to other specific items in the questionnaire that they maintain critical detachment from television, especially, and this attitude is all the more significant for the fact that the pupils are boys who attend grammar schools in the central northern regions which specialise in classical studies.

3. The time and socio-cultural factors

Readers will not have failed to notice that the pupils questioned between 1982 and 1987 are members of the so-called "television generation", since all of them were born at a time when almost every household had a TV set (and this, of course, in an era when a very high proportion of young people attend school); the replies therefore came from people who watch a lot of television, and who, generally speaking, know the media well. These research findings, which are very briefly summarised here, encouraged us to view the relationship between the media and the school in a different light from usual, particularly leading us to compare both the time and socio-cultural factors.

The research, which is still in an experimental phase and is intended to culminate in the setting-up of a real "observation post" to monitor schools, focuses on numerous aspects of schools' practice, being based on the premise that the processes of cultural standardisation activated by the media and by the school itself could acquire different shapes and meanings in the different cultural contexts.

The research therefore concentrates on these contexts, centring on a number of towns and institutions (six towns and 62 institutions so far); this makes it possible to assess the influence of internal and external situations on the attitudes and behaviour of the three major social groups (pupils, parents and teachers) involved in the practical day-to-day running of schools.

Hence variable elements play a part in the research, such as the organisational structure within each institution and the school's image in its town (society's view of schools in general and the image of the individual institution).

The adoption of this kind of research strategy has enabled us to cover aspects of schools' practice which had not previously been appropriately highlighted, such as the great variety of situations at local level, despite the existence in Italy of a centralised uniform organisation in the shape of the Ministry of Education (teacher recruitment and career, curricula and assessment criteria ...) and the great variety of types of school (grammar schools and vocational establishments) and of institutions of the same type (traditional and experimental grammar schools). Furthermore, as the research continues over a period of time, it will be possible to take specific account of the time dimension.

4. The role of the media in the process of education

So it is on the basis of this research experiment and the initial findings - which, we believe, provide ample food for thought and can be taken into account when education policies are implemented - that relations between the media and schools can be reconsidered in a different way.

Readers are bound to have been struck by the fact that all three social groups unanimously attribute considerable importance to the role of the family during young people's formative years. There is no doubt at all that the family is more important than experts and research workers believe - most of whom are accustomed to basing their thinking on even more general views or, on the other hand, on more variable opinions, such as the tendencies found in the large metropolitan areas or in intellectual circles.

The significance of the family, as revealed by the above-mentioned research and as compared with the role of the media, reflects the influence of cultural tradition as experienced and handed down by the family and local culture, and has some effect even on relationships between friends. In small and medium-sized towns, in particular (where the present research is concentrated), local cultural traditions remain as influential and as important as before, according to the subjects questioned, and this is not by chance. In view of this, it can be seen from the replies to the questionnaire and from the research findings that the socio-cultural situation is fairly complex and has specific features.

Young people find themselves within an educational context characterised by the strong presence of four major socialising factors:

- two of them (family and friends) influenced by local traditions and a network of social relationships (sociability, real relationships with emotional overtones);

- the other two (schools and the media), of a broader nature and abstract in content, symbolically based on the written and spoken word and on pictures without strong emotional overtones.

Each of the two pairs is viewed by the adults involved (particularly the teachers and, to a lesser extent the parents) as being in mutual opposition: family against friends and schools against the media. The teachers, for example, are almost literally haunted by the thought that their influence on their pupils might be swamped by that of:

- the family (which they consider to be ignorant and protective),

- friends (regarded as a "bad influence" who stir up trouble),

- the media (viewed as vehicles of falsehood and inferior culture).

In contrast, the pupils, while they are able to understand these conflicts, tend to place the emphasis on what the four agents have in common, and their particular desire is to see all four working towards the same ends. We are very much simplifying the findings of complex research, which really need to be explained in more detail. We shall merely highlight one essential fact, which is the gap between the views of teachers and pupils: while the teachers feel relatively powerless in the face of the contrasting mixture of influences to which their pupils are exposed, and focus their attention on the media, which they make the scapegoat for all their difficulties, the pupils would like their teachers successfully to initiate interaction between the various socialising agents; they would also like to see their teachers skilfully stage-managing a combination of all four. What does this polarisation indicate?

One possible answer calls for bold assumptions about the present situation of the education system in Italy, assumptions which would also relate to every situation in which there are various strong cultural influences, a situation found typically during transitional phases.

This answer suggests that it is necessary, first and foremost to alter teachers' cultural attitude and strengthen their motivation, so that they carry out their functions as educators differently, in a way which takes positive account of the role of the media (how they help pupils, rather than their bad influence). In other words, it is impossible to view the world of school culture as a consistent, finite universe - as if it provided a general, secondary means of preparing pupils for life in society as opposed to the primary, family course followed in private. The main reason for this is the presence of the media, which have brought deep changes in the cultural context beyond the school and family, providing a sort of "almost natural" highly symbolic and abstract environment and infusing it with universal values and models which it is wrong to regard as being in opposition with the culture of the schools.

In other words, after several years on a country's cultural scene, television and the media can no longer be considered to be an additional and different agent, the negative role of which continues to be emphasised - something which was legitimate to some extent when television first appeared. The pupils in teachers' classes today are the children of their families, as well as being members of the "TV generation". In other words, television was and is a medium which provides a second or third way in which we can learn to describe objects and situations and derive concepts from them. In this respect, television and the media are on a wavelength which is not all that different from that of the school, although they partly reshape the relations between parents and their children and between children and their friends. If teachers' attitudes could be changed, the pupils' explicit objective of obtaining eclectic and, to some extent, syncretic education could be attained. It would be an education in which a balanced role may be played by both the school, which can consistently hand down the long-established cultural heritage, and the media, which can pass on the up-to-date, changing cultural heritage.

5. Some conclusions

Two aspects of the relations between the media and schools have been taken into account by education policy-makers: how, on the one hand, could the media be used to provide educational back-up in schools, and, on the other hand, how was the role of the media in classroom activities to be viewed? (A not entirely dissimilar problem has been experienced in respect of computers in recent years.)

In the light of the reported findings of the research into the situation in Italy, we feel able to say that, as far as the first aspect is concerned - ie the use of the media in the sphere of education - significant advances have been made since the early stages (schools television, audio-visual equipment), thanks to the realisation that the media may be used in a creative and beneficial way. The problem is a technico-cultural one:

- inadequate numbers of audio and video cassettes suitable for use in schools are still being produced, although the types of products required by the market are fairly well-known;

- there is not yet a sufficient number of teachers capable of using the audio-visual equipment.

In both these areas encouragement must be given to investment and to modernisation policies intended to improve the situation. However, the situation in respect of the latter area is more dramatic: educational practitioners ought to take account of the existence of the media. The term "take account" has always been interpreted in negative terms; the intention was to face up to the media and keep them in check. For a long time, this attitude had negative effects on the use of audio-visual equipment, which primarily served the purpose of exorcising the media and competing with them. As the findings of the research mentioned above have shown, teachers still reject the media, predicting doom and citing intellectual grounds. Not only have they failed to change their attitude over the years, but they have used it to justify not so much their failures as teachers as their wish to have nothing to do with the media. This is particularly serious, as schools can only operate properly if they have highly motivated teachers.

If a useful conclusion is to be drawn from this analysis, it is the perhaps slightly paradoxical one that there is a need to promote in-service teacher training covering the role of the media in our society. It is not so much - or not only - pupils who need training relating to the media; their teachers' needs are greater. If teachers do not learn to live with the media - and acquire a full understanding (better than that of their pupils) of what the media are and how they function - schools will be destined to perpetuate a schizophrenic educational atmosphere and will lose out in the long run, becoming less and less able to have any influence on the shaping of future generations.

6. Bibliographical references

NB: This report is based on the findings of research carried out by the "observation post for culture in higher secondary education" at the Department of Cultural Sociology of the Cesare Alfieri Faculty of Political Sciences of the University of Florence.

The research started during the academic year 1981-82 and has so far involved direct sociological-anthropological observation in 62 higher secondary education establishments of every kind (varying from grammar schools to vocational institutions) in six small and medium-sized towns. Some 9,000 respondents have been questioned, 4,000 of them pupils, 3,000 parents and 2,000 teachers. The research has led to several publications on individual aspects: work is under way on an overall analysis and conclusions. This is the most extensive empirical sociological-anthropological research carried out in Italy.

The necessary funds were obtained from the Ministry of Education (60%), the University of Naples, the Univerity of Florence, the region of Basilicata and the region of Puglia.

SPAIN : INTRODUCTION OF NEW INFORMATION TECHNOLOGIES IN THE SPANISH EDUCATIONAL SYSTEM (PROJECT ATENEA)

1. Historical background

Computers began to be introduced in schools in various ways in the early 1980s. However diverse, all these attempts shared one common feature: it was teachers who took the initiative to carry them out. There were some channels open in the Ministry of Education and Science which allowed these enthusiastic, self-taught pioneers to carry out their projects for introducing computers in schools. These channels were:

a. Computer science could be taught in secondary schools (ages 14 to 17) as one of the optional subjects in EATP (technical and vocational education).

b. In second level vocational training (ages 16 to 19) a need to update the means and methods used in branches such as administration and management was acknowledged, and therefore some training centres were allowed by the Ministry to introduce computer science (data-processing equipment and computers in management) as a special optional subject. Although the Ministry of Education and Science supported these initiatives, they were carried out only if teachers took the first steps and assumed a great deal of personal responsibility.

c. As concerns general basic education (primary school, ages 6 to 14), the Ministry of Education and Science promoted the acquisition of computers through tenders for buying innovative material. Teachers took advantage of these offers by submitting voluntary experimental projects, a procedure that was necessary to obtain the materials. Here it would seem that the Ministry showed more initiative in providing innovative resources connected with new information technologies; nevertheless, it constituted by no means a systematic plan for the introduction of this technology in educational centres.

In short, it may be argued that isolated and enthusiastic initiatives on the part of a large number of teachers created a favourable atmosphere for the introduction of microcomputers in schools, and that the experiments being carried out and personal interest in the subject, allowed some teachers to become initiated in the use of microcomputers: these teachers are now the members of the first groups of teacher-trainers and the first pedagogical teams of the Atenea Project.

In 1983, several non-educational sectors of the Government (the Ministry of Industry and the Data Processing Centre of the Ministry of Education and Science) suggested that the Secretaria General Tecnica (Technical Secretariat General) of the Ministry of Education and Science should create a working group whose task would be to elaborate a proposal for the rational introduction of new information technologies in Primary and Secondary Education. The proposal was completed in April, 1988, and established the following general objectives:

1. Promote basic knowledge of computer science and its applications, taking into account its influence upon all the factors that condition our social environment.

2. Improve the students' learning process.

3. Use computer science and its applications as a means of constant pedagogical updating for teachers.

As regards the inclusion of computer science in the school curriculum, it was suggested that the subject matter should be considered from a twofold point of view:

a. general subjects, placing special emphasis on its cultural nature
b. programming languages and programmes of application

It was suggested that computer science should be included in the latter years of primary school and secondary school.

This proposal included a budget which was rejected by the Ministry of Finance, due to the amount of the investment involved.

The model established by this proposal was based upon three types of training, and general equipment. To a certain extent, in the elaboration of this model the Ministry of Education was only one decision-maker among many, and so the proposal was not drawn up solely from an educational perspective.

2. The Atenea Project as the co-ordination of several Administrative Units

Despite the inconvenience caused by the rejection of the project's budget, the Ministry of Education and Science considered it urgent to start an experimental plan for the introduction of new information technologies, and thus started it, although in a much more modest form than had been originally planned. The money was obtained from the budgets for didactic material of the two Direcciones Generales (general directorates) in both educational levels, by redefining some of the didactic material modules traditionally sent to schools. At the same time, the Ministry of Education created the Comision de Seguimiento y Coordinacion del Proyecto Atenea (Follow-up and Co-ordination Commission for the Atenea Project) chaired by the Secretario General (vice-minister) of Education and made up of Subdirecciones Generales (general sub-directorates) involved: those of Secondary Education, Primary Education, Teacher Training, Organisation and Automation, and the National Centre of Educational Research and Documentation. This commission drew up the first call for applications from Experimental Centres to join the Project. This call showed one of the most important characteristics of the Atenea Project: all centres taking part in the Project do so voluntarily, through a group of teachers who draw up a pedagogical project approved by the Claustro (general meeting of staff) and the Consejo Escolar (school board). The Commission put the Direcciones Generales of primary and secondary education in charge of integrating these new technologies into their respective curricula and of following up the experiments carried out at their respective schools. Likewise, the Subdireccion de Perfeccionamiento del Profesorado (Sub-directorate for Teacher Training), through the Institute of Educational Techniques, was put in charge of training. A technical co-ordination group formed by technical and educational advisors from each of the bodies involved was also created.

The money to start up the project and pay for materials and personnel came from the budgets approved for the programmes of the Direcciones Generales of both levels of education.

The first decisions were made about the sort of hardware schools were going to be equipped with, and compatible micro-computers were chosen; also a choice of software was made, which included programming languages such as Logo Basic and Pascal, an integrated package and an authoring language, Pilot, in order to facilitate the creation of educational programmes by teachers.

All this was simultaneous to the creation of the Centros de Professores, CEPs (Teacher Centres), devised for the pedagogical and didactic improvement of teachers within a certain territorial area. These CEPs seemed to be the most suitable base for the teacher training infrastructure of the pedagogical teams in the Atenea Project, and they were therefore equipped with the same hardware that had been sent to experimental schools. At the same time the training of the future teacher trainers began. They were to train the teachers of the pedagogical teams at the CEPs.

With the second call for the selection of experimental centres a booklet entitled Proyecto Atenea (considerations and annexes to guide plan-making in schools willing to take part in the Project) was published and the Direcciones Provinciales (local educational authorities) distributed it to schools. This booklet was an important step towards defining what was intended to be experimented in classrooms. At this stage, the Project's profile was entirely educational and with the publishing of the above mentioned annexes and the settling of a single two-level training model, its main features were definitely established as they are now.

But the fact that the Project was being directed by a co-ordinating board and financed by the different units under co-ordination often made decision making not very quick or operational. In order to solve this problem, the then Secretatio General de Educacion decided to create a programme in which human and material resources would join under one single directorate.

3. Area of application

The territorial scope of the Atenea Project covers only the 28 Spanish provinces directly under the administration of the Ministry of Education and Science.

A third initiative was added to those two already being carried out in the Ministry of Education and Science in this field. The three initiatives were the following:

- the introduction of new information technologies in vocational education and in artistic education schools.

- the introduction of Computer Science as an optional subject in Secondary Schools.

- the Atenea Project. The objective of this project was to test the integration of new information technologies in different areas and subjects of the school curriculum. It includes the education of children with special needs.

4. Creation of the Programa de Nuevas Tecnologias de la Informacion y de la Comunicacion (New information and communication technologies programme

In January 1987, the Ministry of Education and Science created the Programa de Nuevas Tecnologias de la Informacion y de la Comunicacion (PNTIC) and alloted to it its own budget. This Programme included the experimental Atenea and Mercurio (introduction of video) Projects, and those connected with the introduction of computers and video in artistic education schools.

Important decisions have been made since then concerning both projects. First, they have been defined as innovation projects. Secondly, the functions of the teacher trainers and their own training have been adapted to those of agents of innovation. And thirdly, follow-up and evaluation plans have been devised for both projects.

At the budget level, large amounts of money have been alloted for maintenance and didactic material both for schools and teachers' centres.

5. Support Infrastructures

There are basically two support infrastructures: and headquarters of the PNTIC (New Technologies Programme) and the CEPs (teachers' centres).

Both have their own staff formed by teachers devoted exclusively to this project.

The staff at headquarters are in charge of training the teacher trainers, acquiring equipment, developing prototypes, preparing software specifications, adapting strategies and establishing channels for sharing information between the various levels of the experimentation.

The training of teachers in the pedagogical teams of participating schools and the exchange of information and didactic experiences with other experimental centres, or with other groups of teachers working in given areas, is carried out with the CEPs. These centres also serve as resource centres.

We consider the creation of these human and material infrastructures, without which we do not believe these activities could be generalised throughout the school system, as one of the achievements of this project.

6. Teacher training

Based upon the understanding that teachers are key elements for any innovation in a school, the general training model attempts to provide them with knowledge that will enable them to transform their way of teaching. The idea is to give teachers the theoretical and practical tools for analysing computer material and selecting those most appropriate for their environment and specific task. Teachers are to acquire a conceptual framework which will allow them to rationalise why, what for and how to use the new technologies. On the other hand, teachers are supposed to observe and analyse didactic experiences in which new information technologies are used. In short, the aim is to make teachers reflect upon their own use of the material and evaluate its results in the teaching-learning process.

Using this model as a basis, a two-level training programme was begun. The two levels were the plan for teacher trainers (the trainers working in the CEPs) and the plan for the training of teachers in pedagogical teams of schools taking part in the experiment.

The main difference between the two is basically that the teacher trainers received a more specialised training not only in technical and didactic aspects but also in the design, planning and organisation of training as well as the evaluation, diffusion and follow-up of experiences at schools, not to mention support to innovation processes.

The first 54 teacher trainers were selected by the CEPs mainly on the basis of their prior knowledge of computers. As a consequence of this, in a certain number of cases, the conversion of a computer enthusiast into a school-innovation-by-means-of-new-information-technologies enthusiast was difficult to achieve. These teacher trainers do not have to teach their normal classes to young students, they are staff members of the CEPs, and are devoted exclusively to the Atenea Project. They receive no supplement to their salary for working on this project.

The pedagogical teams of the centres taking part in the experiment are formed by volunteers; they apply to join the project and agree to follow the training plan and carry out the experiments specified on the work schedule which they elaborate, with the help of their teacher trainer, once the initial training phase is completed. The training of pedagogical teams of participating schools is done outside normal working hours in the CEPs by the above-mentioned trainers. These teachers receive no monetary compensation for taking part in the project.

Under these circumstances, the training of teachers in the pedagogical teams of participating schools is very difficult. It goes on thanks to enthusiasm and interest in learning to use new information technologies. Such a situation cannot be considered adequate in any general model for the entire school system.

7. Software development strategies

The most significant aspect of an innovative educational project of the type we are describing is, perhaps, the material, non-existent at first, which must be used in the process. The very development process creates the materials and, at the same time, production and experimentation with the new materials cause the process to move forward. Teachers cannot order what they need if they do not understand the possibilities of these technologies, and they cannot get to know these unless they have a certain number of models with which to experiment. The increase in both will bring us to a critical mass of a chain reaction which will make it possible to create these materials as easily as any other type of didactic material is drawn up today. But if this is to happen, we not only need to have a number of models equivalent to this critical mass, but also the commercial firms of this sector must create and develop methods to introduce these materials into their usual development and planning processes. For these reasons the Atenea Project has developed certain strategies in order to, on the one hand, collect ideas and products from teachers who best understand the possibilities of the computer and, on the other, encourage publishers and software designers to become interested in this aspect of production. These strategies include the following:

- The Agreement between the Ministry of Education, MINER and CDTI.

This agreement was signed by the Ministry of Education, the Ministry of Industry and the Centro para el Desarrollo Tecnoligico e Industrial (Centre for Technological and Industrial Development), CDTI. Its main features are: general prior specifications concerning CAI programmes in different areas, special projects on simulation backgrounds, special education, telematics, etc. are drawn at the headquarters of the PNTIC (New Technologies Programme), environments, special education, telematics, etc.

The commercial firms submit projects based on the above mentioned specifications and those which are chosen receive partial subsidies and are supervised during the prototype development phase.

Two calls for such commercial projects have been made so far and a significant increase in the number of companies taking part, along with a more active market, has been observed.

Financing has been granted according to each case. Special education projects are 100% subsidised. In general, subsidies represent some 33% of the cost, low interest loans another 33%, and the rest is paid by the company.

The acquisition price for each copy paid by the Ministry of Education has proved difficult to negotiate, due to the insufficient size of the potential market outside the Ministry itself which makes commercial firms hesitate.

The first call for projects has resulted in the development of approximately 50 programmes related to mathematics, physics, chemistry, language, foreign language, logic and Logo for disabled children.

There are 13 special projects being developed as a result of the second call for projects: acquisition of laboratory data, electronic bulletin-board for school use, sets of special education programmes based on concept keyboards and simulation environments and other programmes for curriculum areas.

- Translation of foreign programmes. A special mention should be made here of the recent translation of a set of programmes for solving physics problems.

- Contests. Organised by the PNTIC and the Centro de Investigacion y Documentacion) of the Ministry of Education and Science. Aimed at teachers and commercial firms. Some 15 programmes in different subjects have been obtained through these contests.

8. Lessons learned

Many lessons have been learned, and they have been hinted at throughout this short summary. To summarise even further, it may be said that the introduction of new information technologies into schools with the aim of integrating these into curriculum areas is slow, and that it must be carefully designed and generously planned. Moreover, special emphasis must be placed on the training of teachers who are to carry out this innovation, on the support these teachers need, and on strategies for the development and the testing of the teaching materials which must be produced.

TURKEY: DISTANCE EDUCATION IN TURKEY

1. Introduction

This case study aims to describe the Turkish distance education experience within its historical, social and educational setting.

First, a brief historical perspective has been given and then the main characteristics of the Turkish distance education are presented.

2. Background

The crucial year in Turkish distance education was 1982. In 1982, the new Constitution of the Republic was accepted, and in accordance with the Constitution, a new institution called the "Council for Higher Education" was established to "plan, organise, administer and supervise the education provided by institutions of higher education".

The Council for Higher Education (CHE) immediately reorganised the existing universities and established new ones. There had been 19 universities, 19 academies and 7 polytechnics before the establishment of the CHE. Through the CHE reorganisation programme, all these institutions of higher education were turned into 27 universities. Today, the number of universities has grown to 29 (including Bilkent, the first and only private university of Turkey).

In accordance with the new Higher Education Act that was passed in 1982, Anadolu University (formerly "Eskisehir Academy of Economic and Commercial Sciences") was authorised to provide distance education in Turkey, on a national scale. The history of Anadolu University, which has provided distance education at the faculty level since 1982, goes back to the Eskisehir Academy of Economics and Commercial Sciences established in 1958. The former Faculty of Communication Sciences of the Academy was turned into the Faculty of Open Education (FOE) of the newly established Anadolu University, because at that time (as also today) it was the only institution which had experience in distance education techniques. The first educational television pilot project of Turkey was undertaken at that institution.

Although a distance education programme ("Diffusion of Higher Education": referred to as "Yay-Kur") was undertaken by the Ministry of Education between 1975 and 1978, this initiative had been a dramatic failure because of various political, administrative, financial, and even psychological reasons, which might be the subject of a separate case study. However, especially at the beginning of its own project, Anadolu University carefully evaluated and greatly benefited from that experience of "Yay-Kur", and therefore the 1975-78 experience should not be taken as a total failure.

3. Main characteristics of Turkish distance education

First of all, although the name of the faculty dealing with distance education in Turkey is "Faculty of Open Education", the present system is not "open" in the technical sense of the term. The system is not "open" to everybody unconditionally. The applicants should - at the least - be graduates of secondary schools and should

also take an entrance examination given by the Council of Higher Education. However, as Özgü (1988) has written, three major characteristics may "justify the employment of the term 'open':

a. that a considerable part of the education is carried out through mass-communication media;

b. that students can participate regardless of their geographical and occupational status;

c. and that it offers such a capacity that, in practice, almost anybody who is academically qualified to become a student of higher education, has the chance to realise it." (Özgü, 1988: 1-2).

4. Media

Distance education in Turkey is based on the combination of three media:

- printed material,
- television and radio broadcasts,
- academic counselling centres.

4.1 Printed materials are prepared by the academic staff of various universities and edited by the Faculty members of Anadolu University according to the principles and techniques of distance education. These materials are sent to the students by regular postal channels. Students pay for these services at the beginning of every academic year.

4.2 Television and radio broadcasts are designed as supplementary to the printed materials. As in the printed materials, various university members work on TV and radio programmes, either as authors or as tutors (or both). More than 200 broadcasts are aired every year and every student can watch these programmes all over the country. Broadcasting services are carried out by the state-owned Turkish Radio and Television (TRT).

4.3 Academic counselling centres are located in 18 cities. At these centres, students receive advisory help provided by part-time instructors and academic advisors from the regional university members. One hour per week counselling service is provided for each course at these centres. Approximately 80% of the students have a chance of regular access to these centres.

5. Courses

Two types of programme are offered by the Faculty of Open Education: business administration and economics. Both are four-year degree programmes. In every academic year, each student has to take nine courses, including the History of the Turkish Revolution and English. Diplomas given by the faculty are equivalent to the classical faculty diplomas.

6. Student profile

The distance education programme now serves more than 200,000 students in Turkey and abroad. According to McIsaac, Murphy and Demiray (1988:7), 54% of FOE students live in cities, 27% in towns and 19% in villages. 58% are employed and 25% are female. (The authors point out that "suggestions have been made regarding the potential of the open education programme to improve the ratio of women who receive a higher education".)

7. Activities abroad

The Faculty of Open Education has started a new pilot project for "training Turkish students abroad". The main targets of this project are the Turkish migrant workers and their children living in various European countries, especially in the Federal Republic of Germany. (More than 2 million Turkish citizens live in European countries; 1.43 million of them in the Federal Republic of Germany.) Within that project, "Anadolu University established a contact office in the city of Cologne ... to offer the same distance education programmes as in Turkey to the eligible candidates who were settled in Western European countries" (Özgü, 1988:5).

Besides these programmes, FOE also implemented a joint project with the Ministry of Education: "Primary school teachers training project". This project began in the 1986-87 academic year and covered 130,000 primary school teachers. Throughout this project, more than 100,000 teachers have received a degree, thus raising their professional status. This two-year programme also enabled the primary school teachers to enroll at the university for a faculty degree.

8. Evaluation

The statistics given below show that within five years, the number of students in the higher education distance education programme has doubled:

Number of Students Matriculated in Turkish Universities Between Years 1983-87

Year	Other Universities			Anadolu Uni. Faculty of Open Education			Education
	4-Year Degree Prog.	2-Year Junior College	Total (1)	4-Year Degree	2-Year Teacher in-service	Total (2)	% of (2) to (1)
1983	69 288	22 291	91 659	14 981	-	14 981	16
1984	74 894	27 956	102 850	47 999	-	47 999	47
1985	69 954	26 524	98 478	60 000	-	60 000	61
1986	69 404	26 891	93 295	68 911	48 774	115 655	118(70)
1987	66 740	23 094	89 834	73 828	83 852	157 680	156 74)

Source: Özgü, 1988:6.

This quantitative success might be criticised from the qualitative point of view. However, a critical evaluation of the printed materials and broadcasts may well reveal success either by ("traditional") Turkish university standards or by foreign distance education standards, as indicated by McIsaac, Murphy and Demiray (1988: 10-11).

References

McISAAC, M S and K L Murphy; U Demiray (1988). "Examining distance education in Turkey", paper accepted for publication in Distance Education.

ÖZGÜ, T (1988). Distance education and its contribution to the solution of educational problems in a developing country (Turkey). Anadolu University, Cologne.

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